REVIEW OF THE 1982 COMMERCIAL ABALONE FISHERY IN BRITISH COLUMBIA

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Prince Rubert, B.C.
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ABSTRACT

K.T. Bates. 1984. Review of the 1982 commercial abalone fishery in British Columbia. Can. MS Rep. Fish. Aquat. Sci. 1749:22p.

The 1982 commercial abalone (Haliotis kamtschatkana) fishery in British Columbia harvested 82,175 kg (181,166 lb). Most of the catch was taken in Area 6 (33% of total B.C. catch), with lesser amounts in Area 1 (16%), Area 2E (16.5%) and Area 20 (10.5%). Abalone fishing effort by Statistical Area varied widely and averaged 137 kg/diver day. This is similar to the levels reported in 1980 and 1981, but is down from levels recorded during the period 1977 to 1979. The 1982 was the first year that the total allowable catch for the B.C. coast was not harvested.

Key words: northern abalone, fishery, management regulations.

RÉSUMÉ

K.T. Bates. 1984. Review of the 1982 commercial abalone fishery in British Columbia. Can. MS Rep. Fish. Aquat. Sci. 1749:22p.

Les pêcheurs commerciaux ont capturé 82,175 kg (181,166 lb) d'ormeaux (Haliotis kamtschatkana) en Colombie-Britannique en 1982. La plus grande partie des prises (33% du total en C.-B.) a été pêchée dans la zone 6 et de plus petite quantités ont été récueillies dans les zones 1 (16%), 2E (16.5%) et 20 (10.5%). L'effort de pêche par zone satistique varie beaucoup et la moyenne s'élève a 137 kg par jour de plongée. Ce taux, semblable a ceux de 1980 et 1981, est inférieur à ceux enregistrés de 1977 à 1979. 1982 a été la première année ou la quantité des prises autorisé de la côte de C.-B n'a pas été atteinte.

Mots-clés: ormeau, pêche, règlement de gestion.

INTRODUCTION

This report reviews the 1982 abalone fishery in British Columbia; it describes management strategies, total catch, catch per area, and effort per vessel and day. The present catches and fishing effort are compared with earlier years. Two previous reports (Fedorenko and Sprout 1982) and (Sprout 1983), reviewed the abalone fishery for 1952 to 1980 and for 1981 respectively. The present report is the third in a series of publications by the Department of Fisheries and Oceans (DFO) aimed at providing an annual summary of the abalone fishery.

SOURCE OF DATA

Data were obtained from fishermen's harvest logs (Append. 1) which must be filled out and submitted on a monthly basis or following the completion of each abalone trip. The harvest logs are considered to provide a more accurate estimate of total catch than published data from sales slips and for this reason some discrepancy is expected between catch data from this report and from Fisheries Statistics, B.C., which relies only on the sales slip system. Because the logs are considered confidential, only general fishing locations, rather than specific sites, will be discussed.

Landings are expressed in kilograms (kg), or occasionaly in pounds (lb) for comparative purposes.

REGULATIONS

Each year the DFO representatives meet with abalone fishermen following the end of the season to review the past year's fishery and to discuss the fishing plans for the upcoming season. Following this meeting, each licence holder receives fishing guidelines which detail the allowable catch, season and other appropriate regulations (Append. 2).

In 1982, the allowable coast-wide catch was kept at 94,347 kg (208,000 lb), the same as in 1981. As in previous years, the allowable catch was distributed equally to each licence holder so that each abalone licence was assigned 3,629 kg (8000 lb). The season began on February 22, 1982 and was closed on December 15, 1982. Procedures for reporting of catches are discussed in a later section.

Other major actions continued for the 1982 fishery were as follows:

1. A subcommittee, comprised of five licence holders, was continued to recommend changes in abalone licence policy to DFO and to advise on biological programs and activities.

2. A glaze allowance of 7% on frozen abalone was continued for the 1982 season. This allowance was initiated in 1981 and allows the fishermen to deduct 7% of the total weight of the frozen abalone to arrive at a net weight. Thus the maximum allowable quota per licence, if delivering frozen glazed abalone, was 3,902 kg (8,602 lb).

LICENCING

The limited entry of 26 licences and the $200.00 licence fee were continued and, as in previous years, the licence was issued to the individual. Although personal abalone licences continued to be non-transferable, licence holders were allowed to place their licences on any vessel, whether they were the vessel owner or not. By following this procedure it was possible to place more than one licence on a single vessel. A minimum abalone catch was not necessary to be eligible for licence renewal in 1982 and there was no restriction on the number of divers used, but each diver had to have a valid personal commercial fishing licence.

Prior to fishing , each abalone licence holder had to advise the appropriate District Officer; all abalone catches had to be inspected by a Fishery Officer prior to unloading; and the catches had to be validated prior to departure for the next trip. Again, as in past years, log sheets accompanied by maps showing exact harvest locations, had to be filled daily and, after completion of the trip, forwarded to the Management Biologist coordinating the fishery. Sales slips had to be submitted for all abalone harvested.

COMMERCIAL ABALONE CLOSURES

Commercial abalone closures were implemented in a number of areas along the B.C. coast since 1971. Generally, closures were implemented in order to conserve overharvested or low productivity areas, and to preserve traditional native food fishery areas and important recreational sites. Areas closed, reasons for closure and implementation dates are given in Table 1.

In 1982, the closed areas did not change from the previous year. (Boundaries of closed areas are specified in Appendix 3).

DISTRIBUTION OF ANNUAL LANDINGS BY AREA AND VESSEL

In 1982, a total of 82,175 kg (181,166 lb) of abalone were harvested in B.C. This compares with a high of 481,373 kg (1,061,250 lb) landed in 1977 and an average of 64,338 kg (141,842 lb) reported landed during the

Table 1. Commercial abalone area closures, dates implemented and reasons for closures, B.C. 1982.[a]

	Area[b]	Date closure implemented	Comments
Area 1	Masset Inlet, Masset Sound, McIntyre Bay	1977	-recreational harvest -native harvest
Area 1	Virago Sound	1978	-low stock levels -recreational harvest -native harvest
Area 2E	Juan Perez Sound	1973	-traditional native harvest -recreational harvest, in conjunction with Hotspring Island.
Area 2E	Cumshewa Inlet	1977	-low levels of old individuals; few juveniles and sub-legals; possibility of "recruitment" overfishing.
Area 2E	Skincuttle Inlet, Carpenter Bay	1979	-low stock levels
Area 2W	Rennell Sound	1977	-recreational harvest; one of two areas in Area 2W that is accessible by road from the east coast.
Area 2W	Skidgate Channel	1977	-traditional native harvest -recreational harvest; same as Rennell Sound.
Area 2W	Tasu Sound	1977	-recreational harvest -surveys in this area by DFO in June, 1981, have indicated very low abundance of legal-sized abalone; this area has been closed to recreational harvesting since 1980.
Areas 4 & 5	Parts of Porcher Island, North end Banks Island	1977	-native harvest (Kitkatla Band) -recreational harvest
Areas 4 & 5	Stephens Island, Banks Island closure extended southward	1980	-native harvest (Kitkatla Band) -recreational harvest

Table 1. (cont'd).

	Area[b]	Date closure implemented	Comments
Area 6	Campania Island, Gil Island, Laredo Channel	1977	-native harvest (Klemtu, Bella Bella Bands) -recreational harvest -concerns by Fishery Officers that recreational divers are overfishing the resource; -closure was modified in 1981.
Area 6	Portions of Compania Island reopened	1981	-closure was changed to exclude Squally Channel.
Area 7	Inside Price Island, Swindle Island, Princess Royal Island, Don Peninsula	1977	-native harvest (Klemtu, Bella Bella Bands)
Area 8	North end of Calvert Island	1977	-low stock abundance (Fishery Officer estimates)
Area 9 & 10	Rivers and Smith inlets	1978	-low stock abundance
Area 12 to 19	Lower Johnstone Strait, Strait of Georgia, Strait of Juan de Fuca	1971	-low stock abundance -recreational harvest thought to meet or exceed what stocks can sustain already.
Area 21	Southwest coast of Vancouver Island	1978	-concern by Fishery Officer for low stock abundance.
Area 23 & 24	Barkley Sound and Clayoquot Sound	1978	-these areas were fished heavily during 1970-73; stocks have not recovered sufficiently to permit reopening.
Area 26	Kyuquot Sound	1980	-conservation; concern by Fishery Officers for low stock abundance.

[a]For Area boundaries see Appendix 3.

[b]See Figures 1 & 2 for area location.

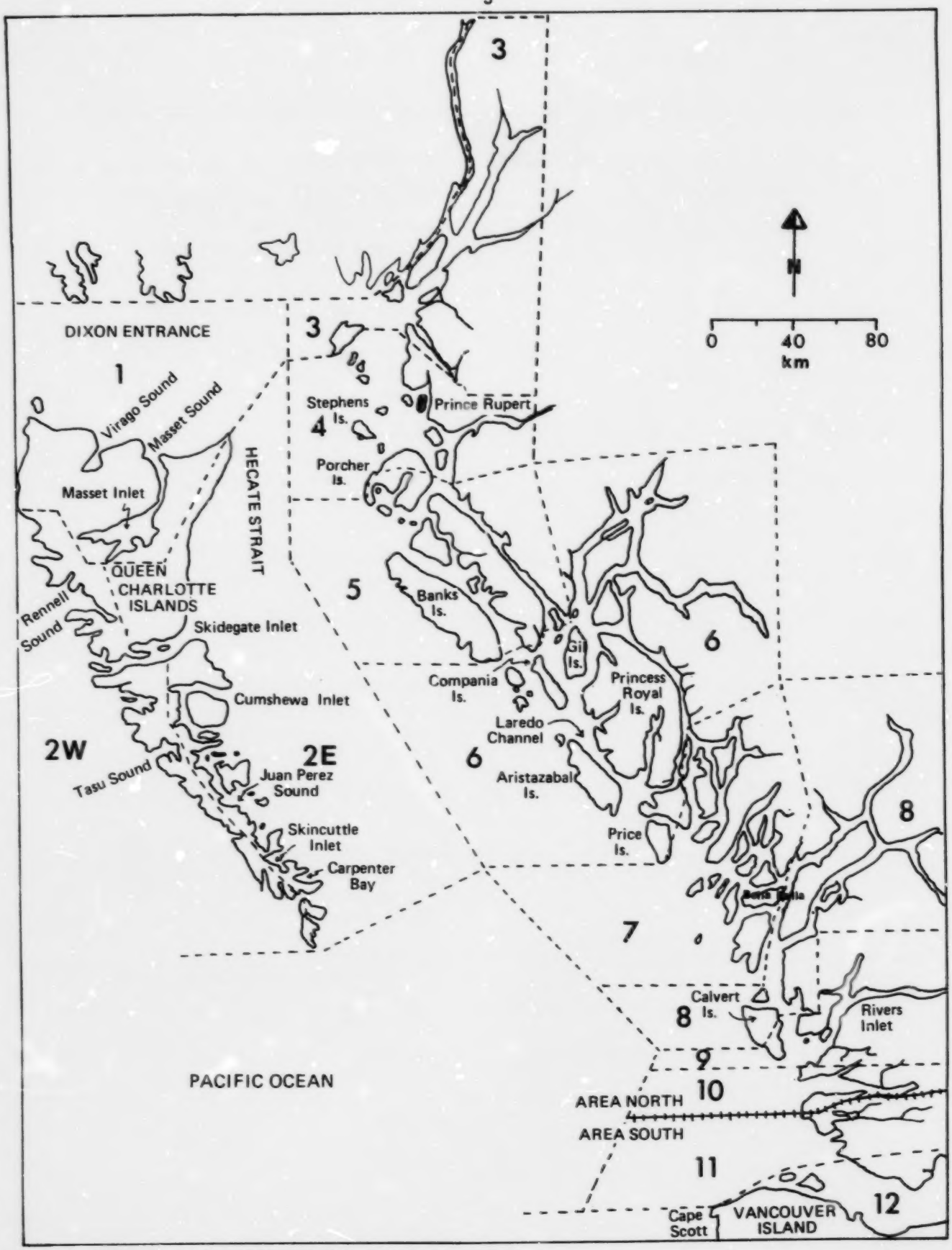

Fig. 1. Location of Statistical Areas in northern B.C.

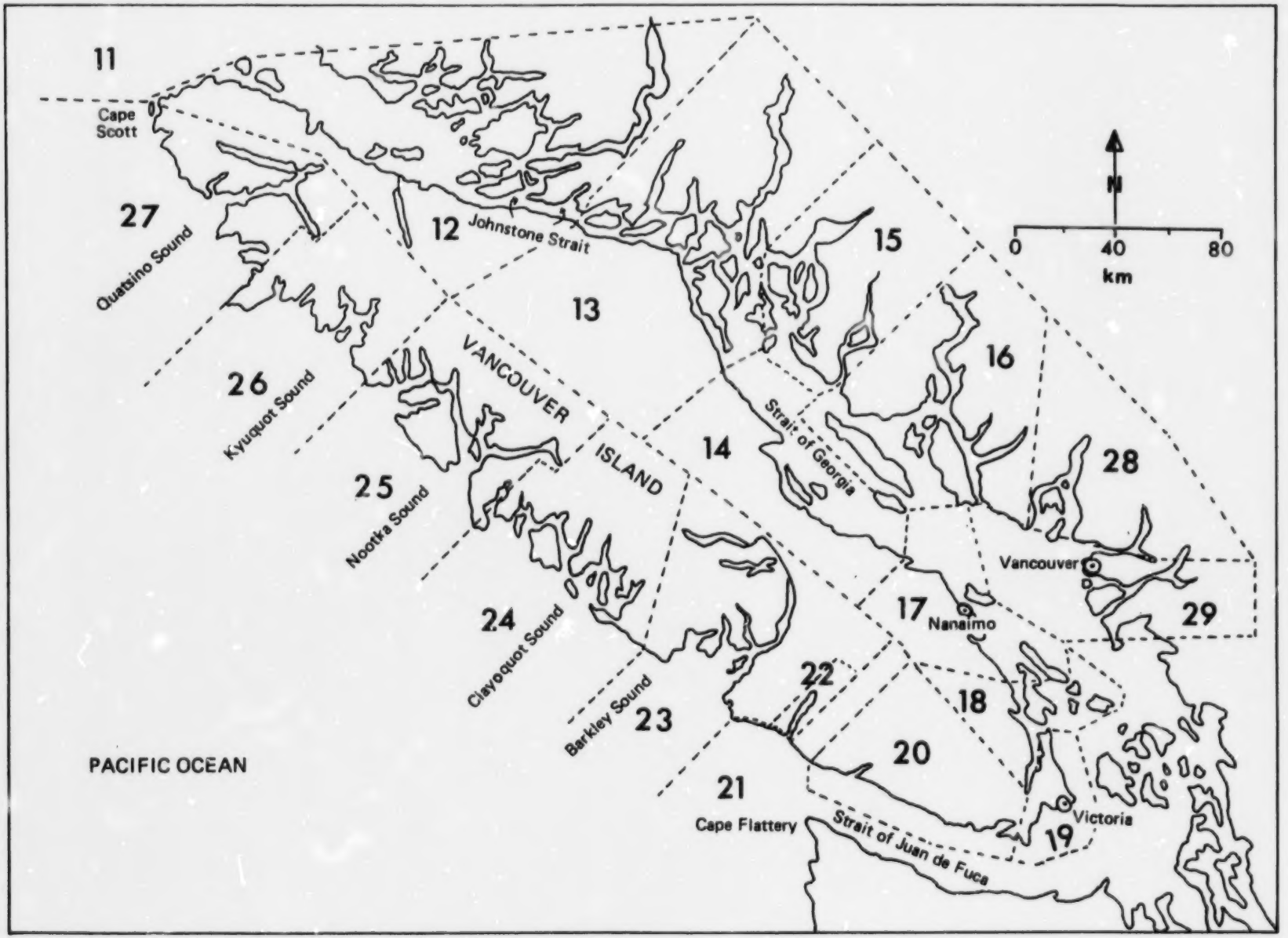

Fig. 2. Location of Statistical Areas in southern B.C.

period 1952 to 1981 (Table 2). Most of the catch was taken in Area 6 (33% of the total B.C. catch), with lesser amounts in Area 1 (16%), Area 2E (16.5%) and Area 20 (10.5%) (Table 3, Fig. 3). The remaining 25% of the catch were taken in small amounts from Areas 2W, 3, 4, 5, 7, 10, 11, 12, 23, 24 and 27. The 1982 catch distribution by Statistical Area was similar to that reported in recent years (Append. 4a & b) except that in 1982 there was an increase in catches from the South Coast (Areas 11-27) and a decline in catches from the Central Coast (Areas 6-10).

Catch distribution shifted slightly in the Queen Charlotte Islands (Areas 1, 2W and 2E) and the South Coast (Areas 11-27). Catches in the Queen Charlotte Islands showed an equalization between Area 1 (15.8% of B.C. total) and Area 2E (16.5% of B.C. total). Catches in the South Coast increased in Area 20 (from 5.1% of B.C. total in 1981 to 10.5% in 1982) and declined correspondingly in Area 12 (from 10.2% in 1981 to 6.2 % in 1982).

The 1982 abalone landings by Statistical Area (Figs. 1 & 2, Table 3) are discussed below:

Area 1
This area supported 16% (13,024 kg) of the B.C. catch; catches were reported from Klashwun Point to Langara Island.

Area 2E
This area also supported approximately 16% (13,538 kg) of the total catch with catches reported from Kunghit Island and north to Louise Island.

Area 2W
A small catch of 161 kg (<1% of total) was reported from this area with harvesting confined to Louscoone Inlet.

Area 3
This area accounted for 2% (1,667 kg) of the total B.C. catch with catches reported from Zayas Island.

Area 4
A total of 1,383 kg or around 2% of the B.C. catch were harvested from this area with catches reported from Oval Bay.

Area 5
Area 5 accounted for 3% of the B.C. catch or 2,201 kg. Catches were reported from both the east and west sides of Banks Island.

Area 6
This area again supported the major abalone fishery on the B.C. coast. Landings of 27,058 kg (33% of total) were reported from this area, with harvesting from the Estevan Group, Aristazabal Island and Price Island.

Area 7
A small catch of 898 kg or 1% of the B.C. catch was reported for this area with harvesting confined to the McNaughton Group.

Table 2. Total annual landings of abalone in B.C., 1952-1982.

Year	Landings (kg)	(lb)
1952	5,398	11,900
1953	10,342	22,800
1954	6,849	15,100
1955	3,583	7,800
1956	499	1,100
1957	953	2,100
1958	5,307	11,700
1959	181	400
1960	1,542	3,400
1961	9,389	20,700
1962	17,463	38,700
1963	5,715	12,600
1964	57,062	125,800
1965	3,084	6,800
1966	726	1,600
1967	862	1,900
1968	91	200
1969	635	1,400
1970	16,239	35,800
1971	6,441	14,200
1972	59,602	131,400
1973	67,131	148,000
1974	26,308	58,000
1975	56,699	125,000
1976	273,061	602,000
1977	481,373	1,061,250
1978	404,212	891,138
1979	208,169	458,937
1980	107,619	237,260
1981	93,651	206,470
1982	82,175	181,166
Total	2,012,316	4,436,421

Table 3. Abalone landings by Statistical Area, B.C., 1982.

Area	Catch (kg)	% Of total
1	13,024	15.8
2W	161	0.2
2E	13,538	16.5
Queen Charlotte Islands Total	26,723	32.5
3	1,667	2.0
4	1,383	1.7
5	2,201	2.7
North Coast Total	5,251	6.4
6	27,058	32.9
7	898	1.1
10	1,124	1.4
Central Coast Total	29,080	35.4
11	3,541	4.3
12	5,093	6.2
20	8,603	10.5
23	1,000	1.2
24	18	~ 0.0
27	2,866	3.5
South Coast Total	21,121	25.7
TOTAL	82,175	100

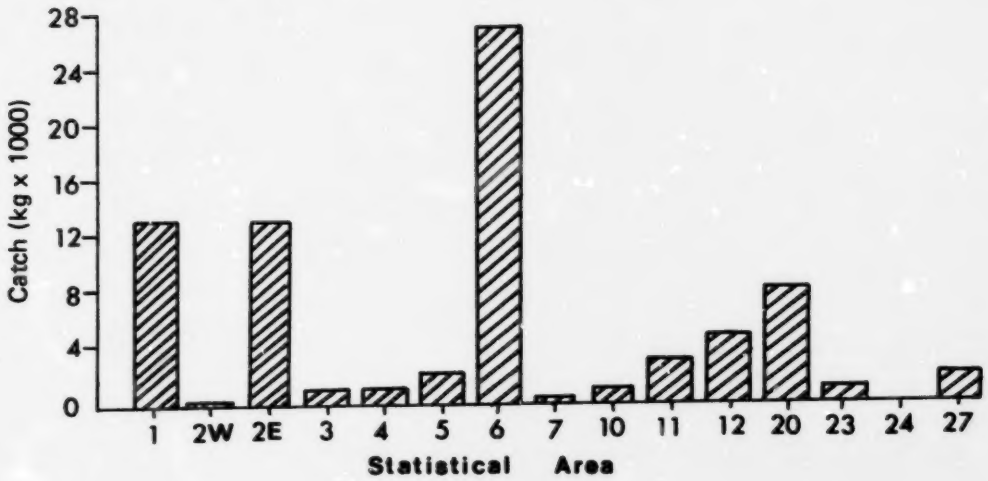

Fig. 3. Abalone catch by Statistical Area, B.C. 1982.

Area 10
The first logged landings for Area 10 of 1,124 kg or about 1% of the catch, were reported in 1982. Harvesting was reported from Smith Sound.

Area 11
This area accounted for 3,541 kg (4% of total) with catches reported from Allison Harbour.

Area 12
Area 12 accounted for 5,093 kg or 6% of the total B.C. catch in 1982. Catches were reported from the Hope Island area, Malcolm Island, Port McNeil area, Numas Island and Shelter Bay area.

Area 20
This area supported the major fishery in the South Coast with 8,603 kg harvest reported (10.5% of total). Landings were reported from Port San Juan and Pedder Bay to Sooke Harbour.

Area 23
Although this area was closed to fishing, a small harvest of 1,000 kg (1% of total) was reported from the Chain Group, Keena Bay and Mills Peninsula.

Area 24
This area which was also closed reported a very small catch of 18 kg from Wickaninnish Island.

Area 27
A reported catch of 2,866 kg (3.5% of total) was harvested from Winter Harbour.

In 1982, landings were reported for all 26 licences and with the exception of two licences, all landed over 2,400 kg (Table 4). By taking advantage of the glaze allowance, 13 licences (50% of total) reported landings between 3,629 kg and 3,902 kg, which was the maximum allowable catch on landings of frozen glazed abalone. Nine licences (35% of total) reported landings of less than 3,175 kg (Table 4). It is noteworthy that 1982 was the first year that the total allowable catch for the B.C. coast was not harvested.

Although all licences reported landings in 1982, only 22 vessels actually harvested abalone. This was due to the fact that two vessels fished two licences each and one vessel fished three licences; thus, seven abalone quotas were harvested by three vessels.

Table 4. Range in abalone landings per licence holder, B.C., 1982.

Landings kg (lb x 1000)	Number of licence holders	% Of licence holders
0 - 454 (0-1)	0	0
454 - 907 (1-2)	1	4
907 - 1,361 (2-3)	1	4
1,361 - 1,814 (3-4)	0	0
1,814 - 2,268 (4-5)	0	0
2,268 - 2,722 (5-6)	6	23
2,722 - 3,175 (6-7)	1	4
3,175 - 3,629 (7-8)	4	15
3,629 - 3,902 (8-8.6)[a]	13	50
TOTAL	26	100

[a]Maximum allowable catch which included glaze allowance on frozen abalone.

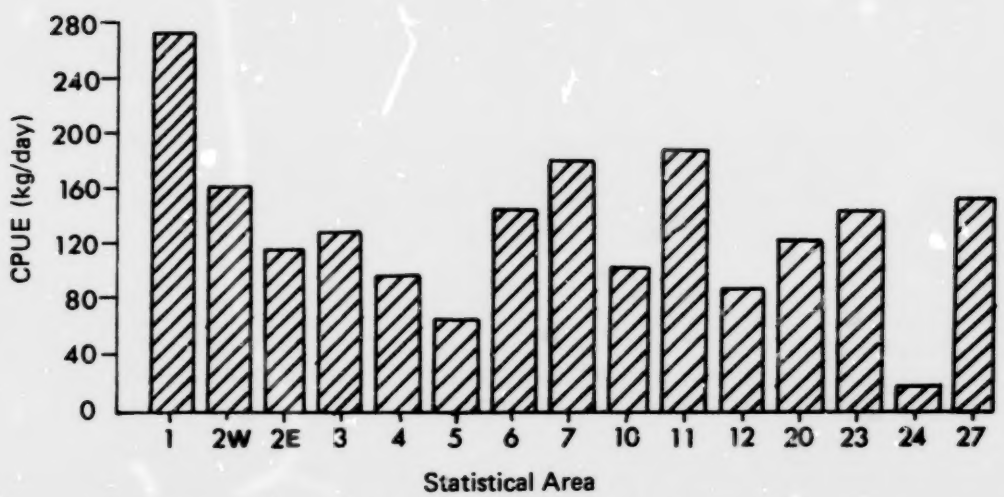

Fig. 4. Abalone fishing effort by Statistical Area, B.C. 1982.

FISHING EFFORT BY AREA AND VESSEL

Fishing effort by Statistical Area is shown in Figure 4 and Table 5. The total number of diver days continued to decline in 1982 to 602 days, down from 702 days in 1981 and the peak level of 2,387 days in 1977. The catch per unit effort (CPUE), defined as the number of kg of abalone landed per diver day, varied substantially between areas. The consistently high producing Area 6 showed little change in CPUE from 1981 (143.0 kg/day) to 1982 (145.5 kg/day) but showed a decrease in total diver days from 264 to 186 days. A decrease in total diver days was also observed in Area 2E (from 126 to 116 days) and Area 12 (from 92 to 58 days) but this was accompanied by a decrease in CPUE. Area 1 showed a large increase in total diver days, from 5 days in 1981 to 48 days in 1982, and a concurrent drop in CPUE (from 385 kg/day to 271 kg/day). Area 20 showed a noticeable increase in both total diver days and CPUE.

Abalone fishing effort by vessel is shown in Table 6. CPUE varied between vessels and ranged from a high of 301 kg/diver day per vessel to a low of 58 kg/diver day per vessel. This is similar to the ranges recorded in previous years (Table 6).

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Table 5. Abalone fishing effort by Statistical Area, B.C., 1977-1982.

Statistical Area	1977		1978		1979		1980		1981		1982	
	Total diver days	CPUE/ diver day(kg)[a]	Total diver days	CPUE/ diver day(kg)[a]	Total diver days	CPUE/ diver day(kg)[a]	Total diver days	CPUE/ diver day(kg)[a]	Total diver days	CPUE/ diver day(kg)[a]	Total diver days	CPUE/ diver day(kg)[a]
1	211	215.5	59	217.8	20	130.7	21	152.2	5	384.6	48	271.3
2W	75	180.8	80	182.5	63	162.0	21	177.4	5	384.6	1	161.0
2E	1,111	233.6	547	185.1	134	185.6	48	261.2	126	169.2	116	116.7
3	51	199.6	5	50.7	-	-	14	153.1	-	-	13	128.2
4	-	-	30	212.9	40	73.2	16	168.2	47	110.3	14	98.8
5	470	199.6	506	174.6	347	116.6	104	108.7	28	102.1	33	66.7
6	251	131.6	761	210.7	449	197.3	381	129.0	264	143.0	186	145.5
7	51	109.8	101	108.1	86	134.1	32+[b]	133.7	24	74.1	5	179.6
8	-	-	-	-	-	-	2	122.5	-	-	-	-
9	-	-	-	-	-	-	6	49.9	3	184.3	-	-
10	-	-	-	-	-	-	-	-	-	-	11	102.2
11	11	78.3	-	-	42	132.1	6	106.3	3	184.3	19	186.4
12	95	89.9	6	76.4	126	137.4	130+[b]	106.8	92	104.3	58	87.8
19	-	-	10	91.2	17	82.8	7	149.6	-	-	-	-
20	16	89.4	23	91.9	4	70.3	12	79.7	63	76.3	71	121.2
23	-	-	-	-	-	-	-	-	-	-	7	142.9
24	4	44.9	-	-	-	-	-	-	-	-	1	17.5
25	16	284.6	34	168.1	4	110.1	-	-	-	-	-	-
26	14	166.6	-	-	3	69.6	-	-	-	-	-	-
27	11	214.6	-	-	13	135.1	-	-	-	-	19	150.8
Total	2,387	-	2,162	-	1,348	-	800+10.5	-	702	-	602	-
Mean[a]	-	201.7	-	187.0	-	154.4	-	132.8[b]	-	133.4	-	136.5

[a]Total catch/Area/Total diver days.

[b]1,389 kg of unknown fishing effort; CPUE based on remaining catch.

Table 6. Mean annual abalone catch per vessel and fishing effort (No. diver days and catch/diver day), B.C., 1977-1982.

Area		No. vessels fishing	Total catch (kg)	Mean catch per vessel[a] (kg)	No. diver days			Catch/diver day (kg)		
					Total	Mean per vessel[b]	Range per vessel	Overall mean[c]	Range per Statistical Area	Range per vessel
1977		22	481,373	21,881	2,389	109	3-327	202	45-285	72-340
1978		25	404,212	16,168	2,162	86	8-204	187	51-218	49-354
1979	open	21	108,664	5,174	653	31	8- 54	166	-	49-585
	quota	24	99,505	4,146	695	29	16- 48	143	-	62-282
	total	25	208,169	8,327	1,348	54	-	154	70-197	-
1980		25[d]	107,619	4,305	810.5	32	13- 73	133	50-261	70-349
1981		24[e]	93,651	3,902	702	29	12- 58	133	74-385	67-325
1982		22[f]	82,175	3,735	602	27	10- 78	136	18-598	58-301

[a]Total catch/Total vessels.

[b]Total diver days/Total vessels.

[c]Total catch/Total diver days.

[d]One additional licenced vessel burned.

[e]Two licences were transferred to other licenced vessels.

[f]Four licences were transferred to other vessels.

Appendix 1: Harvest log submitted by commercial abalone diver, B.C., 1982.

Operator:_____
Licence No._____
Vessel:_____

Return to: Dept. of Fisheries and Oceans
202-417 2nd Avenue West
Prince Rupert, B.C.
V8J 1G8

MONTHLY ABALONE REPORT SHEET

Date	Stat. Area	Harvesting Location	Diver_____ Diver Hrs. lbs. harvested	Diver_____ Diver Hrs. lbs. harvested	Diver_____ Diver hrs. lbs. harvested	Total Catch

NOTES: (i) Report sheets must be submitted on approximately a monthly basis, but can be submitted to coincide with trips.
(ii) Sketch maps must accompany reports showing exact locations harvested.
(iii) Reports will be confidential.

Appendix 2. Guidelines for the 1982 B.C. abalone fishery.

1. Licencing requirements for the 1982 abalone fishery

Limited entry will continue for this fishery. In 1982, the fishing vessel will be licenced. The licence fee is $200.00 and must be renewed before fishing. It will be necessary for the 1982 licence holder to be the registered owner of the designated vessel. At the present time, licences and quotas remain non-transferable. However, this policy is under review and may be revised. Licence holders will be advised of any changes in the licence policy. The diving tender skiff is considered part of the mother vessel's fishing equipment and will not be licenced when engaged in the abalone fishery. Licence holders must carry a certification sheet on the vessel while fishing and the certification sheet must be validated by a Fishery Officer following unloading of catch.

2. Renewal of licences for 1983

It will not be necessary to land a minimum abalone catch in the 1982 fishery to be eligible for renewal of an abalone licence in 1983.

3. 1982 abalone season and vessels quotas

The 1982 abalone fishery will begin on February 22, 1982 and close on December 15, 1982. The total allowable catch of 94,347 kg (208,000 lb) will be divided equally among the licence holders and a quota of 3,629 kg (8,000 lb) will be assigned to each licenced vessel. There will be no restrictions on the number of divers in this fishery.

4. Glaze allowance

In 1982, a fixed glaze allowance of 7% will be applied on all frozen glazed abalone loads. For each load of frozen glazed abalone, licence holders will be permitted to deduct 7% of this weight to arrive at an actual or recorded weight (i.e. weight of abalone minus water). This information should be specified on the certification sheet and on the abalone log sheets.

NOTE: This does not apply to fresh abalone or to abalone which are frozen but do not have a glaze. The glaze allowance of 7% will be applied for all glazed abalone loads in 1982 and no exceptions will be made for loads which may be more heavily glazed.

5. Operation procedures in the 1982 fishery

a) Each abalone licence holder must inform the appropriate District Office prior to fishing in the area. If there is no answer, then contact the Operations Room at 666-2185 in Vancouver.

District (areas included)	Telephone
Queen Charlotte City (1, 2)	559-4413
Prince Rupert (3, 4, 5)	624-9137
Kitimat (6, 7, 8, 9, 10)	632-6158
Port Alberni (21-27)	724-0195
Campbell River (11, 12, 13)	287-2102
Victoria (20)	388-3252

b) Licence holder must carry a certification sheet provided by the department, on the vessel while fishing. The certification sheet must be validated by a Fishery Officer following unloading of catch.

c) Log sheets, accompanied by maps showing exact locations of abalone harvested, must be kept on a daily basis and be available upon request by a Fishery Officer. These logs and maps must be submitted to the Prince Rupert office on a monthly basis or to coincide with each trip.

d) Sales slips must be submitted for all abalone harvested.

Appendix 3. Commercial abalone area closures, B.C. 1982.

THE FOLLOWING AREAS ARE CLOSED BY REGULATION IN THE "PACIFIC SHELLFISH REGULATIONS" OR BY PUBLIC NOTICE AS DESIGNATED ON LEFT HAND SIDE OF THE PAGE.

Areas 1, 2E and 2W

Regulations- 1) the waters of Juan Perez Sound and adjacent waters inside a straight line from Werner Point on Moresby Island to Ramsay Point on Ramsay Island, thence along the northerly shoreline of Ramsay Island to Andrew Point, thence in a straight line to Tuft Island, thence in a straight line to Fuller Point on Lyell Island, thence along the southerly shoreline of Lyell Island to Richardson Point, thence a straight line to Darwin Point on Moresby Island and thence south along the shoreline of Moresby Island to the point of commencement (Werner Point).

Regulations- 2) the waters of Rennell Sound inside a straight line from Cone Head to Clonard Point.

Regulations- 3) the waters of Skidegate Channel and adjacent areas (Dawson Inlet, Dawson Harbour, Trounce Inlet), inside a straight line from Ells Point on Graham Island to Teenakun Point on Chaatl Island, thence easterly along the north shoreline of Chaatl Island to Exact Point, thence in a straight line to Demariscous Point on Moresby Island, thence easterly along the north shoreline of Moresby Island to McLellan Point (East Narrows), thence a straight line true north to Graham Island, thence along the south shoreline of Graham Island to the point of commencement (Ellis Point).

Regulations- 4) the waters of Tasu Sound and adjacent areas inside a straight line from Davidson Point to Tasu Head.

Regulations- 5) the waters of Masset Inlet, Masset Sound and McIntyre Bay inside a straight line from Wiah Point to Skonun Point.

Appendix 3 (cont'd).

Public Notice 6) the waters of Cumshewa Inlet inside a line from Cumshewa Head to Skedans Point, and including waters of Carmichael Passage and Selwyn Inlet bounded on the south by a line from Selwyn Point Light on Moresby Island to a boundary sign opposite on Talunkwan Island, and on the east by a line from Nelson Point to Louise Island to Heming Head on Talunkwan Island.

Public Notice 7) the waters of Virago Sound inside a straight line true north from Inskip Point to point of interception with a straight line from Cape Naden to Cape Edensaw hence westerly along the line between Cape Naden and Cape Edensaw to Cape Naden.

Public Notice 8) the waters of Skincuttle Inlet and Carpenter Bay inside a line from Scudder Point on Burnaby Island to Benjamin Point on Moresby Island and in the north by a line running tre east from Dolomite Point on Moresby Island to a point on Burnaby Island.

Area 4

Regulations 1) all waters inside a line commencing at Hunt Point on Porcher Island, thence in a straight line to the most easterly point of Lucy Island, thence in a straight line to Triple Island, thence in a straight line to Butterworth Rocks, thence in a straight line to Seal Rocks, thence in a straight line to Welcome Point on Porcher Island, thence along the northwesterly shore of Porcher Island to Hunt Point on Porcher Island.

Area 5

Regulations & Public Notice 1) those waters inside a line commencing at a white fishing boundary sign on Cape George on Porcher Island and following a southern shore of Porcher Island to Sparrowhawk Point, thence in a straight line in a direction approximately 155 degrees true to the northwest corner of McCauley Island, thence following the northwest shore of McCauley Island to the light on Keswar Point, thence in a straight line in a direction approximately due south to an orange fishing boundary sign to the southeast of the entrance to Keyarko Cove on Banks Island, thence following the easterly and northerly shores of Banks Island to the light at the entrance to Larsen Harbour, thence in a straight line true south to Banks Island, thence following the westerly shoreline of Banks Island to Kelp Point, thence in a straight line true west to the surfline, thence following the surfline northerly to Bonilla Island light, thence following the surfline northerly to a point bearing Cape George true east, thence in a straight line true east to Cape George.

Appendix 3 (cont'd).

Area 6

Regulations 1) inside a line commencing at Blackfly Point on Gil Island thence following the westerly side of Gil Island to Fawcett Point, thence in a straight line to Dogan Point on Campania Island, thence following the easterly shore of Campania Island to the southerly extremity of Campania Island, thence in a straight line to Oswald Point on Rennison Island to the eastern extremity of Rennison Island, thence in a straight line to Ulrich Point on Aristazabal Island, thence along the easterly shore of Aristazabal Island to Lombard Point, thence in a straight line projected easterly to a white fishing boundary sign placed on the northwesterly shore of Price Island, thence along the westerly and northerly shores of Price Island to a white fishing boundary sign marking the boundary between Salmon Purse Seine Area Six and Salmon Purse Seine Area Seven, thence along the Salmon Purse Seine Six-- Salmon Purse Seine Area Seven boundary to Split Head on Swindle Island, thence in a straight line to Errigal Point on Princess Royal Island, thence along the southerly shore of Princess Royal Island to Hartnell Point, thence in a straight line to the most southerly extremity of Hasting Island, thence along the easterly shore of Hasting Island to Hilbert Point, thence in a straight line across Laredo Inlet to Waser Point on Princess Royal Island, thence following sinuosities of the westerly shore of Princess Royal Island to Nelly Point, thence in a straight line to Maple Point on Gil Island, thence along the northerly shore of Gil Island to Blackfly Point, the point of origin.

Area 7

Regulations 1) bounded on the north by a straight line true east from Jorkins Point on Swindle Island to Dowager Island opposite, and bounded on the south by a line true west from Keith Point on Dowager Island to Price Island opposite.

Regulations 2) bounded on the west from Promise Point on Cecilia Island along the westerly shore of Cecilia Island to Rankin Point, thence by a straight line to Providence Rock near Cape Mark; and bounded on the south by a straight line to the most northerly point on Limit Island thence by a straight line to Fingal Point on Princess Alice Island; and bounded on the east by a straight line to Bush Point on Don Peninsula; and bounded on the north from Bush Point on Don Peninsula along the southwesterly shore of Don Peninsula to Schubert Point, thence by a straight line to Promise Point on Cecilia Island opposite.

Appendix 3 (cont'd).

Area 8

Regulations 1) bounded on the north from Bayly Point on Nalu Island along the southeasterly shore to the most southerly point of Stirling Island, thence by a line true west to the surfline; bounded on the east by a straight line from Bayly Point on Nalu Island to Kelpie Point on Hecate Island, thence along the easterly shore of Hecate Island to Experiment Point, thence by a straight line to Wedgborough Point on Calvert Island; bounded on the south from Wedgborough Point on Calvert Island along the northerly shore of Calvert Island to a point due south of Surf Island, thence by a straight line to Surf Island, thence by line true west to the surfline.

Areas 9 and 10

Regulations 1) in the water of Salmon Purse Seine Areas 9 and 10 as described the aforementioned regulations.

Southern B.C.

Regulations 1) "all waters of Johnstone Strait, Stait of Georgia, Strait of Juan de Fuca, or any bay, inlet or other tidal water tributary thereto in the area bounded on the north by a line drawn from Neville Point to the westerly entrance to Port Neville Inlet to Hickey Point Light on Vancouver Island and bounded on the south by a line drawn from Williams Head through Race Rocks due south magnetic to the International Boundary."

Public Notice 2) all of Salmon Purse Seine Areas 21,22,23,24 and 26.

Appendix 4a. Annual abalone landings (kg) by Statistical Area 1-10, northern B.C., 1952-1982[a].

YEAR	Statistical Area 1	2W	2E	3	4	5	6	7	8	9	10
1952	-[b]	-	-	-	-	-	-	-			
1953	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	(+ 91 kg from unknown Area)			-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	181	-	-	-	-	-
1960	-	-	-	-	-	1,497	-	-	-	-	-
1961	227	-	-	-	2,132	363	-	-	-	-	-
1962	862	1,860	6,486	-	3,901	4,309	3,357	-	-	-	-
1963	998	-	408	-	1,134	1,179	-	-	-	-	-
1964	4,672	2,540	12,655	-	-	-	-	-	-	-	-
1965	-	-	1,588	-	-	-	8,845	318	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	45	-	-	-	-	-	-
1968	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-	-	-	-	-
1970	-	-	-	-	-	45	-	5,307	-	-	-
1971	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-
1973	-	1,814	5,443	-	4,082	16,783	454	-	-	-	-
1974	-	-	-	-	-	5,897	6,350	-	-	-	-
1975	-	-	2,268	-	2,268	9,525	16,329	14,061	-	< 228	-
1976	4,536	-	112,037	-	4,989	88,450	37,194	1,814	-	907	-
1977	45,476	13,563	259,463	10,185	-	93,796	33,027	5,601	-	-	-
1978	12,847	14,602	101,257	254	6,388	88,358	160,380	10,922	-	-	-
1979	2,613	10,208	24,874	-	2,927	40,478	88,582	11,533	-	-	-
1980	3,196	3,724	12,537	2,143	2,692	11,309	49,160	5,166	245	299	
1981	1,923	6,047	21,321	-	5,186	2,860	37,755	1,778	-	553	-
1982	13,024	161	13,538	1,667	1,383	2,201	27,058	898	-	-	1,124

[a] From sales slip records (1952-1977); from log-book records (1978-1982).

[b] No landings recorded.

Appendix 4b. Annual abalone landings (kg) by Statistical Area 11-27, southern B.C., 1952-1982[a].

YEAR	Statistical Area 11	12	13	15	17	18	19	20	21	22	23	24	25	26	27
1952	-[b]	5,398	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	10,342	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	6,849	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	3,538	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	499	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	862	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	5,216	-	-	91	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	45	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	3,311	-	-	-	-
1962	-	45	-	-	-	-	-	-	-	-	<227	-	-	-	-
1963	-	1,996	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	26,580	590	862	-	-	-	-	-	-	-	-	-	-	-
1965	-	1,497	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	726	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	816	-	-	-	-	-	-	-	-	-	-	-	-	-
1968	-	91	-	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	227	-	-	-	-	-	-	-	-	-	408	-	-	-
1970	-	-	-	-	-	1,588	1,134	1,769	-	680	4,899	816	-	-	-
1971	-	<227	-	-	-	-	-	-	-	272	6,169	-	-	-	-
1972	-	6,577	45	-	3,311	3,175	953	408	-	-	40,007	-	5,080	45	-
1973	-	-	-	-	-	1,814	1,361	5,897	-	<227	8,618	20,865	-	-	-
1974	-	2,268	-	-	-	-	<227	7,257	<227	-	1,814	2,268	454	-	-
1975	-	3,175	-	-	-	-	-	3,629	-	-	907	-	<227	3,629	907
1976	-	5,443	-	-	<227	-	1,361	9,525	<227	-	1,361	2,268	<227	-	3,175
1977	861	8,545	-	-	-	-	-	1,430	-	-	-	180	4,554	2,332	2,361
1978	-	459	-	-	-	-	912	2,115	-	-	-	-	5,718	-	-
1979	5,548	17,312	-	-	-	-	1,408	281	-	-	-	-	440	209	1,756
1980	638	14,504	-	-	-	-	1,047	957	-	-	-	-	-	-	-
1981	1,828	9,595	-	-	-	-	-	4,805	-	-	-	-	-	-	-
1982	3,541	5,093	-	-	-	-	-	8,603	-	-	1,000	18	-	-	2,866

[a,b] As for Appendix 4a.